

Water Use Advisory Council (WUAC) Meeting

Hosted by the Department of Environment, Great Lakes, and Energy
(EGLE)

Tuesday, November 10, 2022

1:00 p.m.- 4:00 p.m.

Con Con Conference Rooms A and B, South Atrium,
Constitution Hall 525 West Allegan, Lansing, MI 48933

Remote Option Available Via Teams

[Click here to join the meeting](#)

Or call in (audio only)

[+1 248-509-0316,,288182520#](#) United States,
Pontiac Phone Conference ID: 288 182 520#

MINUTES

1. Welcome

Laura Campbell, Co-Chair, Farm Bureau, welcomed members and guests and shared the logistics for participation in the meeting. She noted she would be sharing the Chair role with fellow Co-Chair Burroughs.

2. Roll Call

WUAC Members/Alternates Present at Constitution Hall:

Abby Eaton, Michigan Department of Agriculture and Rural Development
Bryan Burroughs, Michigan Trout Unlimited
Dave Hamilton, The Nature Conservancy Retired
James Clift, Deputy Director, EGLE
Jay Wesley, Michigan Department of Natural Resources
Jim Nicholas, Nicholas-H2O
Joe Wallace, Michigan Section American Water Works Association
Kelly Turner, Michigan Agricultural Irrigators
Laura Campbell, Michigan Farm Bureau
Megan Tinsley, Michigan Environmental Council
Rachel Proctor, Jackson Consumers Energy
Tom Frazier, Michigan Townships Association

An in-person quorum was present.

WUAC Members/Alternates Present via Teams:

Ben Tirrell, Michigan Farm Bureau
Frank Ettawageshik, United Tribes of Michigan
Jason Walther, Michigan Agricultural Irrigators
John Yellich, Michigan Geological Survey
Steve Kohler, Kalamazoo River Watershed Council

WUAC Members/Alternates Absent:

Brian Eggers, AKT Peerless
Buddy Sebastian, Michigan Ground Water Association
Charlie Scott, Michigan Golf Course Owners Association
Christine Alexander, EGLE
Clyde Dugan, Michigan Section American Water Works Association
Doug Needham, Michigan Aggregates Association
Grenetta Thomassey, Tip of the Mitt Watershed Council
Jason Geer, Michigan Chamber of Commerce
Jim Johnson, Michigan Department of Agriculture and Rural Development
Kyle Rorah, Ducks Unlimited
Margaret Bettenhausen, Michigan Attorney General
Mike Gallagher, Michigan Lake Stewardship Associations
Pat Staskiewicz, Michigan Section American Water Works Association
Rich Bowman, The Nature Conservancy
Sue Hanf, Michigan Aggregates Association

Non-members present:

Adam Zwickle, MSU
Andy LeBaron, EGLE
Austen York, EGLE
Bud Norman
Chanse Ford, USGS
Christine Spitzley, OHM Advisors
Clayton Joupperi, EGLE
Dave Lusch, MSU retired
Emily Finnell, EGLE
Grant Poole
Hannah Arnett, EGLE
James Milne, EGLE
Jerimiah Asher, MSU
Joel Henry, Fishbeck
Kaylee Harwick
Korey Sanders
Lena Pappas, EGLE
Michael Frederick, MGWA
Moth Pask
Numera
Ralph Haefner, USGS
Ross Helmer, EGLE
Sherry Thelen EGLE
Todd Feenstra, Tritium
Younsuk Dong, Michigan State University

3. Approval of Agenda-Roll Call Vote

With the addition of what would be Item 6., Updates to WUAC 2020 Recommendations, the agenda was approved.

4. Approval of Minutes-Roll Call Vote

Frazier noted at the bottom of page 4, “tenmilliondollar appropriation” needs to have spaces added. There being no other corrections the minutes were approved.

5. Public Comment (3 Minute Limit)

There were no public comments.

6. Updates to WUAC 2020 Recommendations

Clift provided updates to the expected expenditure of the \$10 million appropriation for the WAUC 2020 recommendations. The expenditures were outlined via a spreadsheet that was shared in the room and via Teams. It was also noted there was separate \$3 million appropriation for the Michigan Geological Survey to be able to provide match for federal funding to continue their work. Clift outlined details and fielded questions about the expected expenditures in relation to the 2020 WUAC Report Recommendations. The spreadsheet is color coded (green fill) with numbered priority order (one through five) to indicate which recommendations are a priority for Water Resources Division staff to implement. The spreadsheet will be made available for further review. Clift encouraged members to reach out with any questions.

7. Committee Chairs Reports

A. Data Collection Committee

Burroughs explained slide ten and how fish species are used to model aquatic health. Slide eleven illustrated the need to find something analogous for inland lakes. An ecologic metric that makes sense is needed that includes how to determine the amount of groundwater contributions to lakes.

Burroughs stated the Great Lakes Compact and Michigan’s Part 327 are predicated on the charge of protecting water-dependent natural resources from adverse impact. The scope of this charge is broadly inclusive of water-dependent natural resources. At the point of creation and adoption of Part 327, a framework was developed for predicting the impact of water withdrawals on water-dependent natural resources, using stream fish communities as the indicator metric, and the science available at the time supported this framework development for rivers and streams. An analogous framework for inland lakes or wetlands was not feasible at that time. Due to this, Part 327 addressed impacts to inland lakes, not through predicted impact pathways to ecological components of those systems, but through general provisions focused on impacts to the human uses of inland lakes, through water withdrawals.

Ever since, previous iterations of the WUAC have discussed obstacles and needs for creating an assessment framework for inland lakes that would function similarly to the stream-based system the water withdrawal assessment process relies upon now; and be consistent with the scope and charges of the Great Lakes Compact. In recent years, new tools for efficient data collection regarding lakes have become available (e.g., lake level instrumentation and crowd-sourced data platforms, water penetrating laser imaging, detection, and ranging (LIDAR), lake source water isotope analysis, and new approaches to classifying lakes based on

sensitivity to withdrawals (e.g., Wisconsin Central Sands Region Study) have been developed making this effort more feasible.

The Data Committee also had guest speakers from Wisconsin DNR present the findings of their approach for assessing impacts to inland lakes from water withdrawals. Further investigation on this topic is necessary, and several forms of support are now required to enable meaningful progress.

The WUAC Data Committee, to continue productive investigations into Inland Lakes ARIs, needs:

- 1) Technical support from limnological experts, for assistance in identifying and developing mechanistic pathways of impact that tie lake inputs to meaningful indicator metrics, and for identifying viable data needs and collection strategies
- 2) Facilitative modeling expertise to aid in the development and assessment of viable classification strategies for inland lakes, and for conceptual model development to test validity of concepts
- 3) Targeted, pilot scale data acquisition, to allow assessment of the utility, reliability, and cost-efficiency of suspected strategic data needs (e.g., lake water level variability, lake bathymetry, surrounding hydro-geological data, water chemistry, ecological metrics), and assessing how much of these might be conducted by citizens, industry, governmental agencies, or academic institutions.

These theoretical, modeling, and data investigations must go hand in hand, and be informed by each other iteratively. A viable conceptual modeling framework cannot be developed without consideration of the types of data that are possible for use within it; and it is also impracticable to understand what types of data collection and what precision of data is needed without considering the intended uses of that data within the conceptual modeling framework.

Burroughs reiterated the ongoing need for limnological expertise. The WUAC recommends a one-time financial investment of \$200,000, that would be used over two years, to acquire technical support for the WUAC's committees to engage limnological expertise, facilitative modeling capacity, and to conduct multiple targeted pilot scale data acquisition assessments; continued review which the WUAC has deemed necessary to make progress on the inland lakes adverse resource impact assessment topic. Scope of work, requests for proposals (RFPs), and contracts should be developed jointly between WUAC and EGLE, to implement the one-time funding request. Work conducted under contracts, would be expected to be performed over a 2-year period.

Burroughs outlined the three phases of this effort.

Phase 1, Year 1, would include work on conceptual framework development, (including \$50,000 for limnological and other technical expertise consulting; and \$75,000 for facilitative modeling consulting).

Phase 2, Year 2, \$75,000 would be used to conduct targeted data acquisition feasibility assessments for specific data needs identified in Phase 1.

Phase 3, Year 3, would include WUAC review of the work from Phases 1 and 2, and development of subsequent recommendations for this topic.

Year 1 =	\$125,000
Year 2 =	\$ 75,000
Year 3 =	<u>0</u>
Total Request =	\$200,000

Discussion took place regarding this recommendation and the value in reviewing and incorporation previous related work. Feenstra said beginning with lakes with a lot of data is a good place to start. Nicholas suggested reviewing USGS work on inland lakes that was done in conjunction with then MDEQ.

Campbell asked if anyone is uncomfortable and/or cannot move forward with this recommendation. Turner asked if any of the suggestions would change the work proposed. Burroughs said no but they would be used in that work as resources to assess what is available. Turner asked that clarifying language be added and Burroughs agreed. With no further comments, this recommendation will be added to the 2022 WUAC Report for review at the December meeting.

Tinsley clarified two meeting polls are open. First is updated for the EGLE Groundwater Data Warehouse Lean Process Improvement (LPI) project and the second is a presentation from FUGRO group about their aerial LIDAR surveys.

B. Models Committee

Hamilton reported on revisiting the “Half Max Rule” and Streamflow Depletion Apportionment. He stated the “Analytical Depletion Functions” were developed by Zipper, et al., that consist of stream proximity criteria, depletion apportionment equations, and an analytical model to estimate streamflow depletion.

Based on the above, the “Revised Methodology” is composed of:

- The “adjacent” method, which uses Thiessen polygons, to identify nearby stream segments that should be depleted.
- The “web squared” method to estimate the total depletion apportioned to each stream segment.
- Continue to use the Hunt (1999) analytical solution for calculating the streamflow depletion.

Recommendations to Improve WWAT streamflow depletion allocations between WMAs:

- Determine the feasibility of using the revised methodology in the screening tool. Develop techniques that will allow timely calculations in the online use of the tool. And determine the feasibility of conducting a field investigation to show improvement of the revised methodology versus the half max rule.

- Determine the results of applying the revised methodology to the entire data base of registered large quantity withdrawals. Evaluate what, if any, impacts there would be of water availability and potential ARIs. Identify possible measures to mitigate impacts on registered users while avoiding ARIs.
- Prepare recommendations for the Water Use Advisory Council regarding the implementation of the revised methodology and any new or revised policies necessary for successful implementation.

The cost for this project is limited to EGLE staff time with a timeline of one year.

Turner stated item three needs to be edited to reflect the outcome if there are no recommendations. Hamilton disagreed for the need for an edit. Nicholas suggested the following change “Prepare recommendations, based on findings, for the WUAC...” With this change, the recommendation was approved for inclusion in the 2022 WUAC Report.

Hamilton outlined the Committee’s Downstream Accounting Research Recommendations:

- Complete an exhaustive literature review of existing research on observed or modeled downstream propagation of streamflow depletions.
- Examine relationships between long-term changes in index flows and index flow yield relative to climatic conditions at gaged streams throughout Michigan.
- Conduct literature review and empirical analyses to identify and provide underlying support for the appropriate spatial scale for totaling cumulative withdrawals that potentially affect the index flow of each WMA.

The expected cost is \$282,000 with a timeline of two years. However, if Michigan State University’s agreement with the State of Michigan is utilized, the project could be done for \$180,000. Yellich asked if it would only include stream gauges functioning today or will it include historic stream gauge data. Response was both will be considered. With no objections, this recommendation was approved to add to 2022 WUAC Report.

Hamilton shared the Flow Rate Attenuation Study hypotheses:

1. Hydraulics of flow in the channel and stream network attenuate the stream depletion response leading to lower peak rates over longer periods such that, although mass is conserved, the peak depletion rate is not observed.
2. Exchange of water with groundwater allows the stream to access additional storage. This storage attenuates the peak depletion while lengthening the response time in the system. The mass removed is conserved, but peak rates are not observed.

In summary, the proposed study is designed to investigate how streamflow depletions might propagate downstream and combine to affect downstream reaches. Attenuation mechanisms will be modeled. Results of this testing will illustrate how in-stream processes may affect the propagation of peak streamflow depletion rates. The effects of groundwater/stream exchange will be modeled. The initial testing will explore different combinations of aquifer and streambed

characteristics representative of systems in Michigan. If accessing near-stream aquifer storage is determined to be a feasible mechanism through these simple models, coupled groundwater/surface-water models from areas in Wisconsin can be used to illustrate the effects using more realistic models calibrated with extensive field data.

Flow Rate Attenuation Study Recommendation:

- Conduct a series of modeling analyses to test mechanisms that would lead to attenuation of the stream depletion.
- These will test hypotheses 1 and 2. By isolating the mechanisms, key features of the surface-water/groundwater system that help propagate or attenuate upstream depletion response can be identified.
- By better understanding these features, we may identify stream networks that are more susceptible to upstream withdrawal and those that may be more buffered from upstream withdrawals. Identification of potential mechanisms also can help inform analysis of existing data or design of future data collection.

The expected cost is \$235,000 with a timeline of 24-30 months. With no objections this recommendation was approved to add to 2022 WUAC Report.

Hamilton said he is looking forward to implementing recommendations from the 2020 WUAC Report and a Models Committee work group is also working with consultants and EGLE on aquifer performance test guidance.

C. New Topics Committee

There was no report.

D. Water Conservation and Efficiency Committee (WCEC)

Turner reviewed the 2020 Recommendation, 1. Advance Michigan's Water Conservation and Efficiency Efforts through State Climate, Energy, and Water Infrastructure Initiatives. There have been continued discussions on funding review and update of water sector Best Management Practices (BMPs) with a focus on how climate migration/climate change may impact water sectors and how they are planning to mitigate and adapt. The WCEC worked on project scope to establish which water user sectors would be included in the project. They are also working on forming a subgroup to fully develop the concept with background and connections to existing projects. Agriculture was excluded because they already have BMP's. Aquaculture will be moving forward as their own group /bucket and will be invited to a WCEC meeting. The WCEC will be reviewing best practices and innovations from other states.

The WCEC reviewed and edited 2022 WUAC Report recommendations that were sent to the full WUAC for comment. Special focus was given to the potential for water savings potential and what can be expected from this pilot program. This program is not designed to change generally accepted agricultural and management practices (GAAMPs) but to assist with implementation. Campbell added the GAAMPs also have education resources available, and this could

become part of the education resources and information to support the GAAMP. Burroughs expressed thanks and appreciation for revisions. Minor clarification on bottom of recommendation concerning action and if this will be a permanent program to reach entire industry. With no further changes this recommendation was approved to add to 2022 WUAC Report.

E. Implementation Committee

Campbell has been working with EGLE to update funding expenditures to date and plans for future expenditures. She did not add recommendation of this WUAC to remove recommendations in the 2014 report to automate the comparison of water use reporting data, well logs, and large quantity withdrawal registrations and to require the large quantity withdrawal registration number on well logs with pump capacities ≥ 70 gallons per minute. The decision was made to not include in the 2022 WUAC report. It was decided this decision will be tracked via the WUAC minutes.

Data Collection and Conservation and Efficiency Committees documented activities they have been doing as well as recommendations. Campbell will compose the Report to read as the work of the WUAC versus specific committees.

At this time Burroughs took over the role of Chair

8. 2022 WUAC Report Update: Content, Logistics and Timeline

Campbell walked through the 2022 WUAC Report draft including the Executive Summary, progress on 2020 WUAC Report recommendations and how appropriations will be spent and the recommendations from the committees for the 2022 WUAC Report. Except for changing the language to read from the full WUAC versus individual committees, the language is verbatim of what was provided by the committees with the inclusion of the amendments and changes made during today's meeting.

Appendices will include two 2014 pilot projects, the inland lake bathymetry mapping and GIS desktop analysis with field verification of perennial vs. non perennial stream reaches in the high-resolution National Hydrography stream data layer (NHDH). A recommendation matrix from the 2014 WUAC Report will also be included as an appendix. It was decided to reference appendices in the report and post on the WUAC website.

Campbell will work to compile the draft 2022 WUAC Report for distribution via email to the WUAC for review early next week. It is requested that edits be returned to Campbell no later than November 23, 2022. This will allow time for final edits and formatting prior to the December 5, 2022, WUAC meeting.

9. EGLE Update

Milne provided an update on the AquaBounty project. The figure on slide 37 shows the location of AquaBounty's east well field, the estimated 10', 5', and 1' drawdown contours, and the locations of wells in Michigan's Wellogic database that are located within the estimated drawdown contours. Predictions were made by AquaBounty's consultant for 10' and 5'. The 1' drawdown was done by EGLE Water Use Assessment Unit staff. Wells are shown from Wellogic include Type 1, 2, 3 and domestic wells. Irrigation wells are included if recorded in Wellogic. AquaBounty's well field is pumping in the deeper Michindoh (glacial) Aquifer. AquaBounty proposed it is deeper confined aquifer. This is a potential point of contention.

EGLE Office of the Great Lakes and Water Resources Division staff met with Ohio Department of Natural Resources (ODNR) staff to answer some of EGLE's questions about ODNR's permit. AquaBounty is required to submit a monitoring plan to ODNR for their approval. ODNR will provide EGLE with an opportunity to review and comment on the monitoring plan. EGLE has not received monitoring plan to date.

AquaBounty is required to install one set of vertically nested observation wells within the 10' drawdown zone in the State of Michigan. Those wells will be screened in the deeper Michindoh Aquifer and the shallow aquifer. AquaBounty may install additional observation wells in the State of Michigan. EGLE and ODNR will share groundwater elevation data from observation wells in Michigan and Ohio. ODNR and EGLE will cooperate in developing a communication plan.

EGLE and ODNR will develop a coordinated complaint response plan. USGS identified several possible locations in Michigan for additional observation wells to supplement AquaBounty's observation wells, if needed. The Department of Attorney General has assigned two attorneys to advise EGLE on Michigan's options under Michigan's statutes and under common law. USGS also continues to create a regional groundwater model for the Michindoh Aquifer. Hamilton asked if there is concern from users in this area. Milne replied yes, he has received several calls and e-mails voicing concerns. Yellich asked the date of the well locations on the map. It was generated by EGLE staff in March 2022. Yellich noted well locations corrections were made in Wellogic 4-5 months ago. Milne will check to see if this reflects those corrections. Campbell stated a group of county commissioners have been tracking the science and gaps of this Michindoh Aquifer at large from the three states involved and any concerns or additional resources that may be needed. Milne clarified that because Aquabounty discharge will be routed to East Branch of the St. Joseph River (at tributary of the Maumee River in the Lake Erie Basin, not the St. Joseph River that drains to Lake Michigan) and because it is below 5 MGD consumptive use regional notice is not required under Great Lakes Compact. There is no current discussion for designating it a sole source aquifer and making sure it will not be overdrawn. Tinsley asked Milne to recap the next steps. Chanse Ford provided update on developing steady state model and further calibration in coming weeks. Outputs expected after start of new year.

Burroughs noted Jay Wesley is in attendance and has a topic coming up for December 2022. The headwaters of the Prairie River, WMA 20781, is listed as a warm water stream. After extensive stream temperature and fish population data collection, reclassification as cold transitional stream is recommended. DNR Fisheries Division previously shared a proposed methodology for changing stream temperature classifications with the WUAC. This process has not been formally adopted to date. Under statute, this decision would be made by the Natural Resource Commission (NRC), but this decision will be going to the DNR Director to make this change and a memo will also go to NRC for information and allow the public to comment on the recommendation. The plan is to bring memo to NRC in December. Wesley would like to be present it at the WUAC December meeting. Hamilton asked for related information to be provided in advance.

10. Future

a. Remaining 2022 Meeting Dates

Monday, December 5 is the last WUAC meeting for 2022. Nicholas asked for preemptive poll for quorum attendance. Discussion ensued regarding the appointment of alternates to reach critical quorum.

b. 2023 Meetings Dates

The 2023 WUAC meeting are anticipated to be bimonthly starting in February. Discussion took place regarding required letters for reappointment. Campbell mentioned the option of a return to rotation of meeting locations. Ettawageshik noted rotations of meeting sites could also include a return to field trips in conjunction with WUAC meetings.

c. 2023 Call for Special Topics

With consideration to multiple topics that have proposed for potential presentations and additional discussions, the Chairs request anyone wishing to provide further information on a topic related to the business of the WUAC, please notify the Co-Chairs. The Co-Chairs will compile a list and schedule as appropriate for future WUAC agendas. Ettawageshik suggested discussions on industrial uses and management of water.

11. Open Comments (3 Minute Limit)

There were not comments.

12. Motion to Adjourn

It was moved by Nicholas to adjourn the meeting. Motion carried.